

A NEW SPECIES OF *SINELLA* (COLLEMBOLA: ENTOMOBRYIDAE) FROM CHINA¹

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ABSTRACT: A new species, *Sinella* (*Sinella*) *wui*, is described from Qinghai Province, China. It is very similar to *S. (S.) triocula* Chen & Christiansen 1993 in many aspects; however, the eye position, chaetotaxy on Abd. I & II, mental setae X, X₄, make separation easy.

So far, among 84 known species in the genus *Sinella* (*s.l.*), 27 are known from China, but none from Qinghai. A new species, *Sinella* (*Sinella*) *wui*, from this region is described here. The chaetotaxy patterns, setae and macrochaetae designations used in this paper are after Chen & Christiansen (1993, 1997).

Sinella (*Sinella*) *wui*, NEW SPECIES

(Figs. 1-13)

Maximum body length 2.7 mm.

Color: white to pale yellow.

Head: Eyes 3+3 in dark blue patches but clearly separate (Fig. 2). Antennae 1.45 - 1.67 X length of cephalic diagonal. Ant. III organ not clearly seen. Labral setae 4/5, 5, 4, all smooth. External differentiated seta of labial appendage well developed, straight or slightly curved, much thicker than normal setae, with tip exceeding apex of same papilla by 0.50-0.60 of its length (Fig. 3). Seta R of labial triangle smooth to weakly ciliate, about 0.5 as long as seta M₁; M₁ supplementary seta is present in 3 of the 11 specimens seen, ciliate, about as long as seta R (Fig. 4 & 5). Mental setae G₁₋₄ & H₂₋₄ smooth; setae X, X₂, X₃ & X₄ ciliate, respectively 1.36, 1.71, 1.44 and 1.23 times the length of seta R of labial triangle; X₄ supplementary 1,2 rarely present, ciliate (Fig. 4).

Macrochaetae and large mesochaetae: Head — group I 4, group II 5; Th. II — group I 1, group II 4, group III 3 (rarely 4), group IV 2 (rarely 3), group V 4+5 (rarely 5+5), group VI 0; Th. III — group I 6 (rarely 7), group II 9-10, group III 3, group IV 4; Abd. I — usually 5 on each side arranged in pattern V (Fig. 6), rarely 6 in pattern II; Abd. II — 3 in M₃ arch and 1 lateral on each side, additional macrochaeta (M_{3ei}) always present and very close to M₃ arch (Fig. 7); Abd. III — 2+2 dorso-central and 3 lateral on each side; Abd. IV — 14 dorso-central arranged in pattern I, and 6 lateral arranged in pattern III on each side (Fig. 1).

Legs: Trochanteral organ setae 12-13. Inner differentiated setae of tibiotarsus "smooth" with ciliations more closely appressed to setal axis than in *S. triocula*. Outstanding inner macrochaeta of tibiotarsus one on the fore leg and two on the hind leg, acuminate but tapered only at extreme tip. If one setae at 0.25-0.35 from base; if two, the basal seta about 0.12-0.27 from base, the distal one at 0.47-0.66 from base. (Fig. 8). Unguis with 4 inner teeth, basal paired two unequal, outer one large; basal median tooth long and sharply pointed, about 0.35-0.44 way from base to apex of unguis; distal median tooth often present, very tiny. Unguiculus with large outer tooth. Tenent hair apparently longer than unguiculus, strongly clavate (Fig. 9).

Ventral tube: with 12 ciliate setae on anterior face (Fig. 10), 12-14 smooth setae on posterior, 6-7 smooth setae on each lateral flap (Fig. 11).

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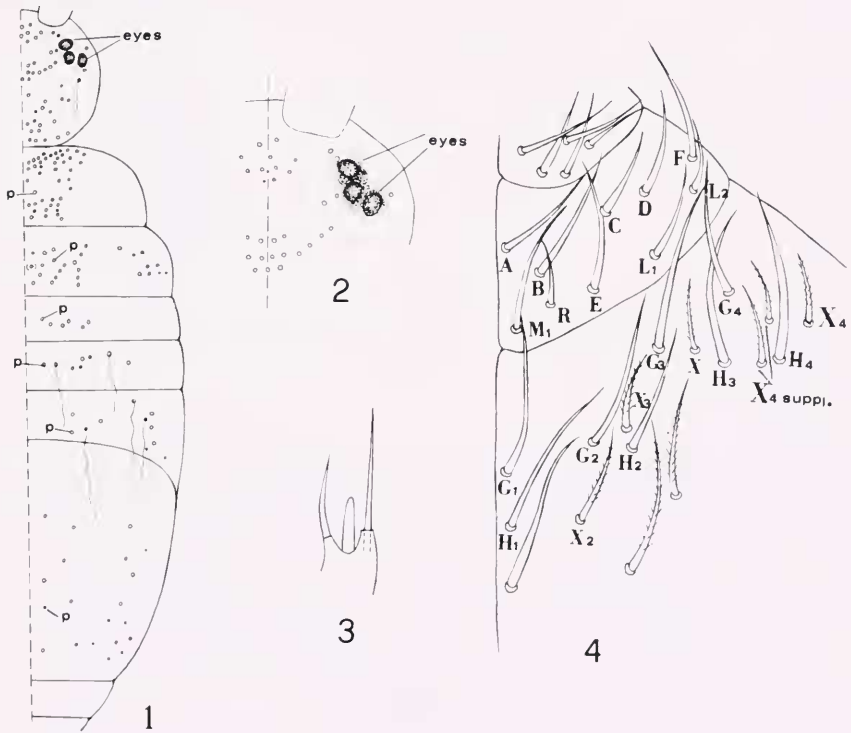
Furcula: Manubrium without smooth setae, manubrial plaque with 3-4 ciliate setae and 2-3 pseudopores on each side (Fig. 12). Mucronal apical tooth 2.3-2.6 X as long as subapical tooth, the latter with tip at slightly less than half way from base to apex of mucro. Uncrenulate dens about 1.3-1.5 X length of mucro. Mucronal basal spine with tip slightly exceeding midway from subapical to apical tooth (Fig. 13).

Male genital plate not seen.

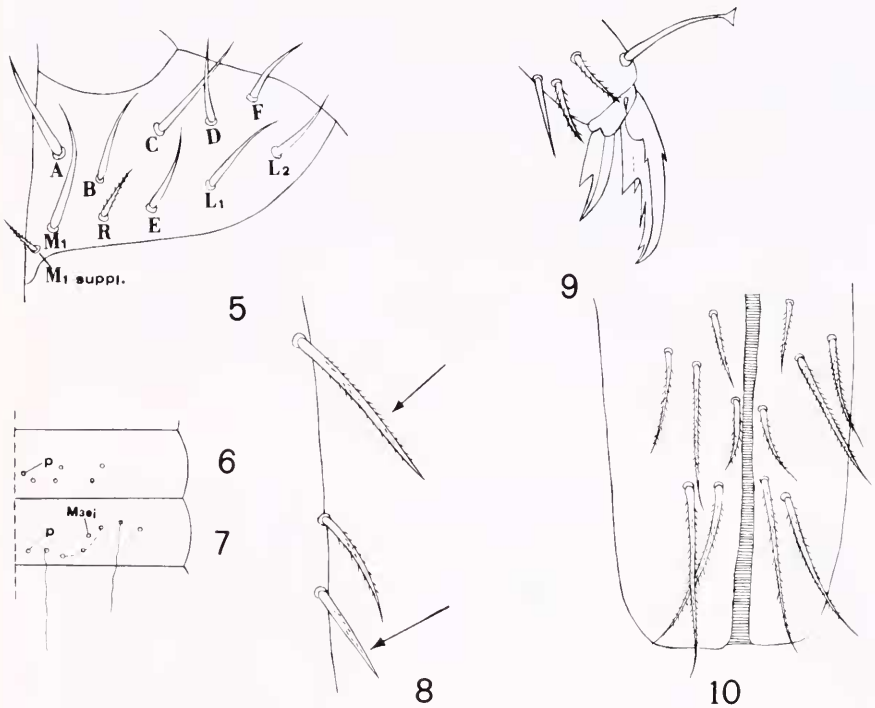
Types: Holotype female, paratypes 10 females, P. R. China: Qinghai: Xining City, altitude 2250-2330m, VI-3-1997, collection number 8654, coll. by Wu Ming. Deposited in Department of Biology, Nanjing University, China.

Ecology: Found only at the type locality, living with *Pseudosinella* in an ant nest under green hedge.

Etymology: Named after Mr. Wu Ming who furnished the type specimens.



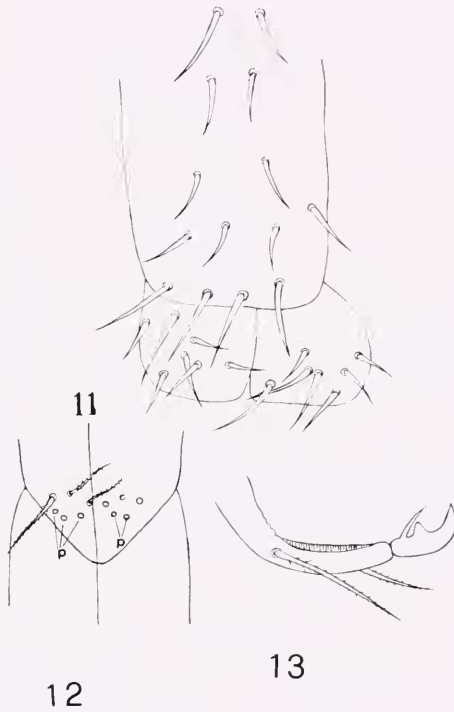
Figs. 1-4 *Sinella (Sinella) wui*, sp. nov. 1. semi-diagrammatic eyes and dorsal chaetotaxy; 2. eyes; 3. external differentiated seta of labial appendage; 4. typical labial and mental chaetotaxy.



Figs. 5-10. *Sinella (Sinella) wui*, sp. nov. 5. rare variant labial chaetotaxy; 6. dorsal chaetotaxy of Abd. I; 7. dorsal chaetotaxy of Abd. II; 8. inner tibiotarsal setae; 9. hind foot complex; 10. anterior face of ventral tube.

Remarks: The new species differs from all known species in two characters. One is the typical pattern of dorsal macrochaetae on Abd. I with 5 macrochaetae on each side arranged in a new pattern (for convenience, named as pattern V); rarely with 6 in pattern II. The other character is the mucronal basal spine length, the tip of which slightly exceeds the midpoint from the apex of subapical to apical tooth, therefore, belonging to pattern II (Chen & Christiansen, 1993); however, it is apparently longer than those in pattern I which tip reaches at most only slightly exceeding the subapical tooth; however, it is clearly the shortest in pattern II in all known species with tip reaching at least near the apex of the apical tooth.

In the genus *Sinella* (*s.l.*), there are five species with 3+3 eyes: *triocula*, *straminea*, *hexophthalma*, *sexoculata*, *pseudostraminea*, all in *Sinella (Sinella)*, only 2 of them were reported from China: *S. (S.) straminea* Folsom 1899 and *S. (S.) triocula* Chen & Christiansen 1993. It is easy to separate the new species from the 3+3-eyed Japanese species *straminea* (redescribed by Yosii, 1942), in having 2+2 dorsal macrochaetae on Abd. III whereas they are 1+1 in



Figs. 11-13. *Sinella (Sinella) wui*, sp. nov. 11. posterior face and lateral flap of ventral tube; 12. manubrial plaque; 13. apex of dens and mucro.

straminea. This species may be the same as that identified as *straminea* by Denis (1929) from China (Peking), both having a long, pointed basal median tooth of the unguis and a long mucronal basal spine. Both features are very different from Folsom's original Japanese *straminea*, as redescribed by Yosii in 1942 which has a short mucronal spine, a very small median ungual tooth and lacks an apical tooth as well as having a different eye configuration.

The new species is closely related to *Sinella (S.) triocula* in sharing many characters, such as chaetotaxy on Abd III & IV; however, it differs from the latter as below.

Character	<i>triocula</i>	<i>wui</i>
Eye position	front 2 touching each other and separate from hind one	separate
Dorsal macrochaetae on Abd. I	7(6), pattern I(II)	5(6), pattern V(II)
Dorsal macrochaeta M _{3ei} on Abd. II	absent	present
Mental setae X, X ₄	smooth	ciliate
Mental setae X/R, X ₄ /R	0.6, 0.54	1.23, 1.3
Mucronal basal spine	short (pattern I)	long (pattern II)

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